SEQUENCE LISTING

<110> Olwin, Bradley B.
Rosenthal, Richard S.

<120> CHIMERIC FIBROBLAST GROWTH FACTOR PROTEINS, NUCLEIC ACID MOLECULES, AND USES THEREOF

<130> 2848-32

<140> Not Yet Assigned
<141> 1999-08-19

<150> 60/097,160
<151> 1998-08-19

<160> 27

<170> PatentIn Ver. 2.0

<210> 1
<211> 556
<212> DNA
<213> chimeric sequence

<220>
<221> CDS
<222> (8)..(553)

<400> 1

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ggtagtc atg aga cag atc aag atc tgg ttt cag aac cgg cgc atg aag   49
        Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys
          1               5                  10

tgg aaa aag gcg gct gct ggt tct atc act acc ctg cca gct ctg cca   97
Trp Lys Lys Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro
 15                  20                  25                  30

gaa gac ggt ggt tct ggt gcc ttc cca cca ggt cac ttc aaa gac cca  145
Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro
                 35                  40                  45

aaa cgt ctg tac tgc aaa aac ggt ggt ttc ttc ctg cgc atc cac ccc  193
Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro
             50                  55                  60

gac ggc cga gtg gac ggg gtc cgc gag aag agc gac cca cac atc aaa  241
Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys
```

```
        65                  70                  75

cta caa ctt caa gca gaa gag aga ggg gtt gtg tct atc aaa gga gtg   289
Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val
     80                  85                  90

tgt gca aac cgt tac ctt gct atg aaa gaa gat gga aga tta cta gct   337
Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala
 95                 100                 105                 110

tct aaa tgt gtt aca gac gag tgt ttc ttt ttt gaa cga ttg gag tct   385
Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser
                115                 120                 125

aat aac tac aat act tac cgg tca agg aaa tac acc agt tgg tat gtg   433
Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val
            130                 135                 140

gca ctg aaa cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct   481
Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro
        145                 150                 155

ggg cag aaa gct ata ctt ttt ctt cca atg tct gct aag agc gaa cag   529
Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln
    160                 165                 170

aaa ctc atc tct gaa gag gat ctg tga                              556
Lys Leu Ile Ser Glu Glu Asp Leu
175                 180
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<210> 2
<211> 182
<212> PRT
<213> chimeric sequence

<400> 2

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Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys
  1               5                  10                  15

Lys Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp
            20                  25                  30

Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg
        35                  40                  45

Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pr  Asp Gly
     50                  55                  60
```

```
Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln
 65                  70                  75                  80

Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala
                 85                  90                  95

Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys
            100                 105                 110

Cys Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn
        115                 120                 125

Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu
    130                 135                 140

Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln
145                 150                 155                 160

Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln Lys Leu
                165                 170                 175

Ile Ser Glu Glu Asp Leu
            180
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<210> 3
<211> 556
<212> DNA
<213> chimeric sequence

<220>
<221> CDS
<222> (11)..(553)

<400> 3

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ggtagtccat atg ggc cgc aaa aaa cgc cgc cag cgc cgc cgc ccg ccg    49
           Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro
             1               5                  10

cag gaa ttc gcg gct gct ggt tct atc act acc ctg cca gct ctg cca   97
Gln Glu Phe Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro
     15                  20                  25

gaa gac ggt ggt tct ggt gcc ttc cca cca ggt cac ttc aaa gac cca   145
Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro
 30                  35                  40                  45
```

```
aaa cgt ctg tac tgc aaa aac ggt ggt ttc ttc ctg cgc atc cac ccc   193
Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro
                 50                  55                  60

gac ggc cga gtg gac ggg gtc cgc gag aag agc gac cca cac atc aaa   241
Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys
             65                  70                  75

cta caa ctt caa gca gaa gag aga ggg gtt gtg tct atc aaa gga gtg   289
Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val
         80                  85                  90

tgt gca aac cgt tac ctt gct atg aaa gaa gat gga aga tta cta gct   337
Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala
     95                 100                 105

tct aaa tgt gtt aca gac gag tgt ttc ttt ttt gaa cga ttg gag tct   385
Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser
110                 115                 120                 125

aat aac tac aat act tac cgg tca agg aaa tac acc agt tgg tat gtg   433
Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val
                130                 135                 140

gca ctg aaa cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct   481
Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro
            145                 150                 155

ggg cag aaa gct ata ctt ttt ctt cca atg tct gct aag agc gaa cag   529
Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln
        160                 165                 170

aaa ctc atc tct gaa gag gat ctg tga                              556
Lys Leu Ile Ser Glu Glu Asp Leu
    175                 180
```

<210> 4
<211> 181
<212> PRT
<213> chimeric sequence

<400> 4

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Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Glu Phe
  1               5                  10                  15

Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp Gly
             20                  25                  30
```

```
Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu
          35                  40                  45

Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg
      50                  55                  60

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu
 65                  70                  75                  80

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn
                 85                  90                  95

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys
            100                 105                 110

Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr
        115                 120                 125

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys
    130                 135                 140

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys
145                 150                 155                 160

Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile
                165                 170                 175

Ser Glu Glu Asp Leu
            180
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<210> 5
<211> 146
<212> PRT
<213> Bos taurus

<400> 5

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Pro Ala Leu Pro Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His
  1               5                  10                  15

Phe Lys Asp Pro Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu
             20                  25                  30

Arg Ile His Pro Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp
         35                  40                  45

Pro His Ile Lys Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser
```

```
     50                  55                  60

Ile Lys Gly Val Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly
 65                  70                  75                  80

Arg Leu Leu Ala Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu
                 85                  90                  95

Arg Leu Glu Ser Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Ser
            100                 105                 110

Ser Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Pro
        115                 120                 125

Lys Thr Gly Pro Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala
    130                 135                 140

Lys Ser
145
```

<210> 6
<211> 146
<212> PRT
<213> Homo sapiens

<400> 6

```
Pro Ala Leu Pro Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His
  1               5                  10                  15

Phe Lys Asp Pro Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu
             20                  25                  30

Arg Ile His Pro Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp
         35                  40                  45

Pro His Ile Lys Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser
     50                  55                  60

Ile Lys Gly Val Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly
 65                  70                  75                  80

Arg Leu Leu Ala Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Phe Glu
                 85                  90                  95

Arg Leu Glu Ser Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr
            100                 105                 110
```

Ser Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser
115 120 125

Lys Thr Gly Pro Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala
130 135 140

Lys Ser
145

<210> 7
<211> 140
<212> PRT
<213> Bos taurus

<400> 7
Phe Asn Leu Pro Leu Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys
1 5 10 15

Ser Asn Gly Gly Tyr Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp
20 25 30

Gly Thr Lys Asp Arg Ser Asp Gly His Ile Gln Leu Phe Leu Cys Ala
35 40 45

Glu Ser Ile Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Phe
50 55 60

Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asp
65 70 75 80

Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr
85 90 95

Tyr Ile Ser Lys Lys His Ala Glu Lys His Trp Phe Val Gly Leu Lys
100 105 110

Lys Asn Gly Arg Ser Lys Leu Glu Pro Arg Thr His Phe Gly Gln Lys
115 120 125

Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
130 135 140

<210> 8
<211> 140
<212> PRT
<213> Homo sapiens

<400> 8

```
Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys
 1               5                  10                  15

Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Tyr Asp
            20                  25                  30

Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala
        35                  40                  45

Glu Ser Tyr Gly Glu Tyr Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr
    50                  55                  60

Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn
65                  70                  75                  80

Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr
                85                  90                  95

Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Tyr Gly Leu Lys
            100                 105                 110

Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys
        115                 120                 125

Ala Ile Leu Phe Leu Pro Leu Pro Tyr Ser Ser Asp
    130                 135                 140
```

<210> 9
<211> 60
<212> PRT
<213> Drosophila sp.

<400> 9

```
Arg Lys Arg Gly Arg Glu Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu
 1               5                  10                  15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile
            20                  25                  30

Glu Ile Ala His Ala Leu Cys Leu Thr Glu Arg Gln Ile Lys Ile Trp
        35                  40                  45

Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
    50                  55                  60
```

<210> 10
<211> 60
<212> PRT
<213> Drosophila sp.

<400> 10
Arg Lys Arg Gly Arg Gln Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu
1 5 10 15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile
20 25 30

Glu Ile Ala Tyr Ala Leu Cys Leu Thr Gln Arg Gln Ile Lys Ile Trp
35 40 45

Phe Ala Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
50 55 60

<210> 11
<211> 60
<212> PRT
<213> Drosophila sp.

<400> 11
Arg Lys Arg Gly Arg Gln Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu
1 5 10 15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile
20 25 30

Glu Ile Ala His Ala Leu Cys Pro Pro Glu Arg Gln Ile Lys Ile Trp
35 40 45

Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
50 55 60

<210> 12
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 12
Arg Gln Ile Lys Ile Trp Phe Pro Asn Arg Arg Met Lys Trp Lys Lys
1 5 10 15

<210> 13
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 13
Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys
1 5 10 15

<210> 14
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 14
Arg Gln Ile Lys Ile Trp Phe Gln Asn Met Arg Arg Lys Trp Lys Lys
1 5 10 15

<210> 15
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 15
Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Arg Trp Arg Arg
1 5 10 15

<210> 16
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 16
Arg Arg Trp Arg Arg Trp Trp Arg Arg Trp Trp Arg Arg Trp Arg Arg
1 5 10 15

<210> 17
<211> 86
<212> PRT
<213> Human immunodeficiency virus

<400> 17
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser

```
  1               5                  10                  15

Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe
             20                  25                  30

His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly
         35                  40                  45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr
     50                  55                  60

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp
 65                  70                  75                  80

Pro Thr Gly Pro Lys Glu
                 85
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<210> 18
<211> 60
<212> DNA
<213> primer

<220>
<221> CDS
<222> (1)..(48)

<400> 18

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cca atg tct gct aag agc gaa cag aaa ctc atc tct gaa gag gat ctg   48
Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
  1               5                  10                  15

tgaaagcttg gg                                                    60
```

<210> 19
<211> 16
<212> PRT
<213> primer

<400> 19

```
Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
  1               5                  10                  15
```

<210> 20
<211> 60
<212> DNA

<213> primer

<400> 20
cccaagcttt cacagatcct cttcagagat gagtttttcg ctgctcttag cagacattgg 60

<210> 21
<211> 59
<212> DNA
<213> primer

<220>
<221> CDS
<222> (11)..(58)

<400> 21
ggtagtccat atg ggc cgc aaa aaa cgc cgc cag cgc cgc cgc ccg ccg 49
Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro
1 5 10

cag gaa ttc c 59
Gln Glu Phe
15

<210> 22
<211> 16
<212> PRT
<213> primer

<400> 22
Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Glu Phe
1 5 10 15

<210> 23
<211> 16
<212> DNA
<213> primer

<400> 23
ggaattcctg cggcgg 16

<210> 24
<211> 25
<212> DNA
<213> primer

<220>
<221> CDS
<222> (2)..(25)

<400> 24
g gaa ttc gcg gct gct ggt tct atc 25
Glu Phe Ala Ala Ala Gly Ser Ile
1 5

<210> 25
<211> 8
<212> PRT
<213> primer

<400> 25
Glu Phe Ala Ala Ala Gly Ser Ile
1 5

<210> 26
<211> 81
<212> DNA
<213> primer

<220>
<221> CDS
<222> (11)..(79)

<400> 26
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Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met
1 5 10

aag tgg aaa aag gcg gct gct ggt tct atc ac 81
Lys Trp Lys Lys Ala Ala Ala Gly Ser Ile
15 20

<210> 27
<211> 23
<212> PRT
<213> primer

<400> 27
Met Arg Gln Il Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys
1 5 10 15

Lys Ala Ala Ala Gly Ser Ile
20